87. Specific categorical Modelling System, third stage

Dr. Ruben Garcia Pedraza

Probabilidad Imposible: Specific categorical Modelling System, third stage

Imposiblenever@gmail.com

87. Specific categorical Modelling System, third stage

The third stage of the specific categorical Modelling System is the responsible for the distribution of sets of decisions according to the model on the map made in the second stage of the specific categorical Modelling System, modelling real objects synthesising the measurements of the object and those qualities shared between the object and the chosen category in the second stage by Application, chosen category among all the categories in the database of categories as first stage by Application, categorical qualities able to set a conceptual scheme in the first stage of the specific categorical Modelling System.

As soon the second stage of the specific categorical Modelling System has finished the modelling of a real object and the location of the model on the map, according to: measurements of the real object, qualities shared with the category, model, and location; the third stage of the specific categorical Modelling System will distribute the sets of decisions regarding to that object having previously set up sets of decisions for each logical set in the conceptual scheme.

In general, the way to work any intelligence by Application is:

- First stage by Application, taxonomy or list of categories, the database of categories as application or first stage, setting the definition of every category in quantitative terms.

- Second stage by Application, the attribution of a category to a real object when matching the measurements of that object with the quantitative description of a category within the application.

- Third stage by Application distributed in four steps or systems: categorical Modelling System, categorical Decisional System, categorical Application System, categorical Learning System.

- First stage of the categorical Modelling System, the conceptual scheme as scheme made as a network of relations between the categories set up in the application, but now interconnecting the categories according to their logical relations by vectors (I will deepen more on the organization of the conceptual scheme in upcoming posts about this topic, changing some functions of the first catetorical check which will include the check of the vector weight in addition to other checks)

- Second stage of the categorical Modelling System, upon those qualities shared between the real object and the category chosen, to make models to locate in their exact position on the map.

- Third stage of the categorical Modelling System, upon measurements of the real object, the model and the position on the map, the distribution of decisions.

The way to make this distribution of decisions is to have previously in the conceptual scheme sets of categories according to logical relations between qualities, connecting every set of categories to some types of decisions.

In the post dedicated to the "Specific categorical Modelling System, first stage, in the collaboration process in the second phase", I will deepen more about the organization of the conceptual scheme, setting differences between the conceptual scheme as scheme based on the classification of categories in logical sets regarding to qualities, where the qualities are organised according to level of abstraction or generalization, as if it was a Russian Dolls system, but this time not associated with the sub-factoring level but the sub-abstraction level of the quality, so the categories are filed in the conceptual scheme in a system that must integrate the classification of categories based on a Russian Dolls system depending on the sub-abstraction level of the qualities, combined with Venn diagrams.

And at the same time, the conceptual scheme must comprehend a network system based on vectors reflecting the logical relations between categories and qualities (for

that reason, the analysis of the vector weight should be included in the first categorical check), measuring the weight of every category upon the number of factors. In addition to the possibility of the assignation of another different type of weight, not related to the number of vectors, but related to the level of importance of that relation, for instance, in a sociogram, different weight of importance per vector based on the importance of every relation in the organization of a society. The vector linking the prime minister and the king/queen has a different weight than the vector linking a normal citizen with his/her employer (the importance of every vector should be worth depending on the information weight on that vector).

The importance of these new innovations that I will introduce in the conceptual scheme in upcoming post resides (what would change the meaning of the first categorical check) in the fact that, the more the categories are catalogued, classified, allowing the classification of real objects based on the qualities in common between the object and the chosen category, the easier the setting of decisions is.

For instance, in a Specific Artificial Research for Productive Artificial Research by Application in a farm, the classification of sets of decisions according to types of agriculture, as for instance, rainfed agriculture or irradiated agriculture, within rainfed agriculture different sub-types of rainfed agriculture, as for instance: gran, vineyards, cotton, etc. and within irradiate agriculture different types as for instance: vegetables, fruits, etc. This set of decisions must be mixed with other types of decisions according to the ground conditions, type of chemical composition of the land or type or weather.

For every set of categories in the conceptual scheme, it is possible the automation of set of decisions regarding the plantation, irrigation, fertilize, and pesticides to use in the plantation.

In the end, after the analysis of sets of decisions based on what types and sub-types, or sub-sub-types, at any level of sub-abstraction in a Russian Dolls system depending on the sub-abstraction system, ordering the categories in logical sets of sub-abstraction and sets of vectors based on relations between categories, and analysing even the singular weigh of importance of every vector, this analysis based on: sub-abstraction system, network of vectors, level of importance of every vector, and location of the model on the map, must allow decisions based on this analysis.

In a Specific Artificial Intelligence for Productive Artificial Research by Application for the delivery of packages, setting a possible classification of sets of decisions based on: what qualities in the conceptual scheme are shared between the object and the category; the category could be set up as a combination of qualities depending on: size (small, medium size, big, extra big etc...), level of fragility (not fragile, small fragility, medium, big, extra big etc...), level of security (for instance for chemicals or documents, etc...), destination (classifying possible destinations by continents or regions, or level of risk as for instance, countries with high level of criminality, in conflict, terrorist risk war).

For every quality: size, fragility, destination, risk; the consideration of different levels as: small, medium, big, extra-big; are no other things but the classification in a sub-abstraction system, based on this qualities, sub-classification which can go even further, for instance, in countries at risk the distinction of what kind of risk: low or high risk of, crime, terrorist attack, war, etc.

According to what qualities of a category are shared by the real object, the package itself, the decision regarding to two different packages but filed in the same category in the conceptual scheme, can be different. If two real objects are filed in the same category, but sharing each of them different qualities of the category, the decision regarding each object will be different, being a decision adapted to the qualities of that category present in the object.

The setting of sets of decisions based on logical sets within the conceptual database, adding as well in the set of decisions variables related to the position of the model in the map, will make easy the automation of what decisions are suitable for every package according to: size, fragility, security, destination, risk, etc... the set of decisions could vary from what type of mean of transport is more suitable depending on the size, fragility, security, destination, risk, position in the map, etc.. to other decisions regarding to what type of protection the package needs based on the level of fragility, and what type of surveillance needs depending on the level of security.

At the end, the way to send the package is a result of: automated sets of decisions to logical sets shared within the real object and the category in the conceptual scheme, setting possible sets of decisions for each set of logical relations of that category in the conceptual scheme shared by the real object.

In any case, in the plantation or the delivery system, in order to automatize the distribution of decisions in the third stage of the specific categorical Modelling System is important to have a really well system of classification in the conceptual scheme, based on the level of abstraction or generalization to create a Russian Dolls system based on a sub-abstraction system, understanding for sub-abstraction system the way to classify categories within categories which goes from the more general/abstract category to the more particular/concrete category, setting types of decisions for every level of abstraction or general idea in the conceptual scheme as a Russian Dolls system of sub-abstraction.

At the same time, this organization synthesised with the network system of connections between categories, and the weight of importance of every factor, will make possible that when analysing what qualities in the category are present in the real object, depending of what qualities of the category are in the real object, what decisions according to these qualities in the real object, the vectors in the real object, and the importance of every vector in the real object, to make decisions applying Venn diagram in the analysis of what decisions must be applied to that object based on the qualities from the category present in the object, the weight of the vectors and the analysis of the importance of each vector, and of course the position on the map.

The distribution of decisions will be as a result of:

- The analysis by Venn diagram of the set of decisions related to the set of qualities from the category within the real object.

- The weight of the vectors, depending on the number of vectors, will depend on the number of relations with other categories to be in mind when making decisions, having in mind the importance of each vector to make very adapted decisions to that single real object.

- The position on the map.

In a delivery system, not only is it important to know the size, fragility, security, and risk of a package, but also how many kilometres it is going to travel to reach the destination. In a plantation, many decisions as for instance the irrigation, are going to depend on the

position on the map, the level of water needed to water a plantation, and if necessary, will vary depending on the precipitation in the area, for instance.

In the end all the attribution system of decisions in the third stage of the categorical Modelling System could be set up based on sets of decisions related to the logical sets where a real object is supposed to be depending on the qualities shared with the chosen category, the analysis of the weight of vectors and the importance of every vector, along with the position that the model has on the map.

The sum of all of these sets and variables will make possible to set up an automatic method to attribute decisions to real objects not needing human intervention, automatically based on the model on the map the third stage of the categorical Modelling System will make decisions to be filed in the database of decisions as first stage of the categorical Decisional System, to be projected in the second stage, and transformed intro instructions in the third stage.

Instructions that will later be filed in the database of instructions as first stage in the categorical Application System to be implemented, and after the analysis of the results, sending reports to the Learning System, in addition to the Decisional System, the Learning System will have enough information to analyse how to improve the whole process.

The process mentioned above is the normal process for any categorical decision related to any object, whose category attributed was full or utilitarian, decision based on the sets of decisions depending on the position of the model in the map and the sets of qualities in the classification in the conceptual scheme as a Russian Dolls systems based on a sub-abstraction system, in addition to the number and importance of its vectors.

The only difference in a decision between a real object whose category was attributed as full attribution (level of similarity between object and category equal to or greater than a critical reason), and other real object whose attribution to a category was utilitarian (chosen that category with the highest level of similarity although not reaching the matching level), is the fact that a real object whose attribution to a category is full, (percentage of similarity equal to or greater than a critical reason), the number of qualities shared between the real object and the category is higher than the number of

qualities shared between an object and a category whose attribution is utilitarian (not reaching the matching point).

The difference between a full and a utilitarian attribution is the margin of error; the margin of error in a full attribution is within the rational error, the margin of error in a utilitarian attribution is out of the rational error, requiring adaptations.

The adaptations according to the margin of error: rational in full attributions and not rational in utilitarian attributions; could be done analysing what qualities of the real object do not match with the qualities of its category, analysing what other categories have within the qualities of this object not matching with its chosen category, but able to match with external categories.

The reason to analyse what vectors of an object are out of the normal vectors supposed for the chosen category, is because, apart from the internal vectors supposed for the chosen category, any other vector related to any other external category, means that in the analysis of possible decisions by Venn diagram, would be advisable to integrate sets of decisions related to that external vectors connecting the real object with that other external categories.

At this point, an important difference to have in mind in the analysis of set of decisions according to logical sets in the conceptual scheme, is the fact that the analysis of sets of decisions for utilitarian decisions will be more complex due to utilitarian attributions will need to include more set of decisions related to external vectors, while full attributions will not need to include as many sets of decisions related to external vectors as utilitarian attributions will need.

As long as it is necessary to include more and more sets of decisions related to external vectors, the analysis by Venn diagram will be more complex. As long as it is not necessary to include sets of decisions related to external vectors, the analysis by Venn diagram will be easier.

The importance of the level of complexity in the analysis of sets of decisions related to sets of qualities/vectors within a real object, some of them, the internal ones, within the chosen category, the other ones, the external ones, out of the chosen category, is

because as long as the complexity of the decision is higher, the risk of contradictions between decisions is higher.

If in the case of a plantation, in order to plant, irrigate, fertilize, or use pesticides, every decision itself is as a result of the use of different Venn diagrams, related to the chemical composition of the land, the weather, and the needs of this type of seed chosen (category chosen), as long as for this land and weather the category chosen (the seed) has some margin of error, as long as the margin of error is greater, the decisions to make are more complex, up to the point that some Venn diagrams can have contradictions, for instance, the Venn diagram used to decide what type of irrigation the plantation needs, or the Venn diagram used to decide what type of fertilized the plantation needs, or what type of pesticides are necessary, or even about how to plant the seed, how deep and distance between seeds, are decisions which can have contradictions between them as long as the way to make this decisions were more complex due to the acceptance of a greater margin of error.

The risk of contradictions between sets of different decisions based on different Venn diagrams is higher as long as the margin accepted in the attribution is greater.

The greater the margin of error accepted in the attribution in the second stage by Application, the higher the probability of contradictions in the third stage of the categorical Modelling System, and the higher the risk for utilitarian attributions.

For this reason, the fifth categorical check in the third stage of the categorical Modelling System is so important, because the main purpose of the fifth categorical check in the third stage in the categorical Modelling System is to analyse contradictions between the range of decisions related to the same real object.

The difference between the fifth categorical check in the third stage of the categorical Modelling System and the first categorical adjustment in the database of decisions in the first stage of the categorical Modelling System is as follows:

- The fifth categorical check in the third stage of the categorical Modelling System will check the absence of contradictions between the decisions within the same range of decisions for the same real object. If in the attribution in the second stage by Application

of a land to a type of seeds for a farmland, analysing the chemical composition of the land and the weather and types of seeds gathered in the first stage by Application as a taxonomy of seeds, the attribution, full or utilitarian, is made upon some margin of error, rational if full or not rational if utilitarian, but due to the margin of error, more probably in not rational, when setting the decisions for this land in the third stage of the categorical Modelling System, the range of decisions for this land includes contradictory decisions, the fifth categorical check within the third stage of the categorical Modelling System must find these contradictions, and finding out contradictions, the contradictory decisions within the same range of decisions attributed to the same object, are contradictory decisions sent back to the analysis by Venn diagram including as new information the contradiction found, in order that a new logic analysis of the sets of decisions based on the sets of qualities shared by this object and the category, and the external categories, can provide an alternative solution avoiding the contradiction.

- The first categorical adjustment in the first stage of the categorical Decisional System, once any contradiction within the same range of decisions related to the same object have been solved in the third stage of the categorical Modelling System, the third stage of the categorical Modelling System files the decisions in the database of decisions as first stage of the categorical Decisional System, in this case the organization must have in mind the sub-factoring level due to the decisions were based on the model in the map, so now the decisions can be filed according to position in the map, sub-factoring level, in addition to subject, as for instance how to plant, irrigation, fertilize, pesticides, etc. And once the decisions are filed in the database of decisions the first stage of the Decisional System will make sure through the first categorical adjustment that there is no contradiction between all the decisions filed in the same sub-factoring level, in the different subjects within the same sub-factoring level, and there is no contradiction between the decisions of any sub-factoring level or subject and any other decision belonging to a different sub-factoring level or subject. In case of contradiction between a new decision and any other already existing in the database of decisions, the first stage of the categorical Modelling System will send back the new decision to the source, in this case the third stage of the categorical Modelling System to make a new decision avoiding the contradiction found in the first stage of the categorical Decisional System.

The importance of the fifth categorical check in the third stage of the categorical Modelling System and the importance of the first categorical adjustment in the first stage of the categorical Decisional System, is due to both assessments are going to keep the harmony within all the decisions, and the result of their analysis are going to provide information relevant for the second decisional categorical critique carried out by the categorical Learning System.

In the same way that in by Deduction, the deductive Learning System will carry out the seven rational critiques, calling them rational critiques because the critiques depend on the rational attribution in the second stage by Deduction, the attribution of pure reasons (equations) to set of data from the (specific, global, or particular) matrix, instead by Application the categorical Learning System will carry out the four categorical critiques, categorical as long the critiques depend on the categorical attribution in the second stage byApplication.

As I have stated in the post "Third stage in Artificial Research by Application", the four categorical critiques are:

- First objective categorical critique, criticising if the wrong attribution of real objects to some categories is equal to or greater than a critical reason, as to analyse the common factors in these wrong attributions, as to make changes in the qualities of the categories affected.

- Second decisional categorical critique, criticizing if the number contradictions in some sets of decisions is equal to or greater than a critical reason, as to analyse the common elements in this contradictions as to determine the real reason of the wrong attributions of some set of decisions to some types of real objects, connected internally and/or externally with some vectors, as to make changes in the associations between sets of decisions and sets of qualities in which is based the attribution of decisions to some qualities when analysing decisions and qualities by Venn diagram, or analysing if the problem resides in the methodology used in the analysis using Venn diagram, making as many changes as necessary in the methodology.

- Third instruction categorical critique, criticising the attribution of instructions to decisions.

- Fourth robotic categorical critique, criticising the attribution of robotic devices to instructions.

The responsible for the categorical critiques is the categorical Learning System, because as a result of the categorical critiques, the Learning System will decide what artificial

psychological subjective auto-replications are necessary to improve the artificial psychology of that Artificial Intelligence.

In order to make the categorical critiques the categorical Learning System will collect information across all the assessments made at any point of the process, as for instance information coming up from the fifth categorical check in the third stage of the categorical Modelling System, and the first categorical adjustment in the first stage of the categorical Decisional System, assessments which are going to provide information of contradictions found between decisions, contradictions that are going to be counted on the second decisional categorical critique, so that it could be able to identify the frequency of the contradictions for each set of decisions associated to each set of qualities in the conceptual scheme, as to assess the possibility that the origin of the contradictions could be related to some inner factor within the set of categories or some wrong attribution related to the position, analysing the common factors in the wrong attributions, in order to identify what quality or what aspect of what quality, or what aspect or quality of a position, is the responsible for these wrong attributions in order to be amended.

If a group of wrong decisions are attributed to some quality or aspect of a quality, or to some position, and every time that the contradictory decision is sent back to the source, the solution of the source is to attribute that quality or position to another different decision out of contradiction this time, in this case the Learning System should send as a project to the Designer of Artificial Intelligence, as part of the Artificial Engineer, the possibility to link for the future, that at any time that a set of qualities linked to a real object in this position present the common factor included before in these wrong attributions, from now on, every time that a real object in this position has this factor, the decision linked to this object must be that one without contradiction every time that decisions related to this factor are sent back to the source.

It is evident that in the second decisional categorical critique, the way to resolve these situations is not going to be so easy as I have exposed here, but the research in the direction about how the Learning System can find common factors in groups of mistaken decisions, open the door to the possibility that by Artificial Intelligence is possible not only to set up decisions, but to make artificial psychological subjective auto-replications as to fix any part of the artificial psychology to improve the attributional system wherever the replication of the attributional psychology is needed.

The attributional psychology is part of the artificial psychology, along with other parts such as the inner psychology in which all intelligence, program, application, robotic device is organised, following always the same psychological scheme based on the Hegelian philosophy of thesis, synthesis, antithesis, now adapted as application, replication, auto-replication, as well as comprehension, explanation, decision.

In any case the decisional categorical critique is not done in the third stage of the categorical Modelling System nor the first stage of the categorical Decisional System, in these systems what is done is the fifth categorical check in the third stage of the categorical Modelling System, and the first categorical adjustment in the first stage of the categorical Decisional System, but the categorical Learning System must have access to the results of these checks and adjustments in order to count the frequency of contradictions in decisions, within the same range of decisions attributed to the same real object in the third stage of the categorical Modelling System, and within the same position or any other position regardless of the subject in the first rational adjustment.

Having the categorical Learning System an update frequency of contradictions in the decisions attributed to real objects in some position, update frequency as long as it has access to the frequency of contradictions between decisions found out in the fifth categorical check and first categorical adjustment, as long as the frequency is equal to or greater than a critical reason, the categorical Learning System must analyse common factors in these group of decisions wrongly attributed to this type of objects, under this qualities, in that position. Finding out the common factor in all these wrong attributions, depending on the common factor, could propose a project of improvement to be applied by Artificial Engineering, having been approved by the categorical Decisional System.

Finally, I would like to mention the possibility that in Mixed Artificial Research by Application, an heuristic research can make possible new attributions in the second stage by Application (real objects not reaching the matching level with any category in the first stage by Application), new attribution that after being set up in the heuristic research, could be useful for some reason in the productive research.

If by chance an Specific Artificial Intelligence for Mixed Artificial Research by Application in mineralogy, working in another planet, finds out a new mineral, not reaching the

matching level respect to any existing category in the application, so that this new mineral can be considered as a new category whose measurements to be included as the quantitative description of the new category, what is called a new attribution, if this new attribution has some potential in the productive system, for the exploitation of this new attribution the Mixed Artificial Research by Application should include the new attribution within the conceptual scheme as first stage of the categorical Modelling System, setting the category within the conceptual scheme paying attention how to englobe the new attribution in the Russian Dolls system as a sub-abstraction system, going from the more general/abstract to the most particular/concrete, placing the new category in the right position according to the classification system, and linking the new category with as many other existing categories as it could have some logical relations between them.

Later on depending on the place that this new attribution has in the conceptual scheme, what determines its position in the Russian Dolls system as a classification system of sub-abstraction, ordering the new attribution in the right conceptual/logical sets, and after linking the new attribution with all those other categories having qualities in common, once the classification is done according to the logical/conceptual sets where the new attribution has been located, the sets of decisions which must set up for this new attribution, are those set of decisions linked with the conceptual/logical sets in which the new attribution has been filed in the conceptual scheme, in addition to any other possible decision to set up for this new attribution based on any other vector between this new category and any other quality of any other category from any other set, in addition to possible decisions for some vectors whose level of importance in the diagram could be higher.

In this way, not only by Application is possible to set up decisions for existing categories and positions, if possible to set up decisions for new attributions, which later on, as long as there could be more real objects from different positions attributed to this new category, upcoming decisions for new objects linked with this new category will be based on the synthesis of the decisions set up for this new attribution, plus any other possible related external vectors associated with the margin of error in which this object was attributed, plus decisions related to the different position in which this new object has been found but related to that new category based on that other different object found for first time, reason why now there is this new category in the database of categories.

In any case, if in the automatic setting up of set of decisions for new attributions based on what set of qualities are present in the new attribution, there is a contradiction, the contradiction will be found out, if it is in the same range of decisions, in the fifth

categorical check in the third stage of the categorical Modelling System. If the contradiction is between the new decisions and any other one from any other position or subject, it will be found in the first categorical adjustment. And, as soon the categorical Learning System identifies that the new set of decisions has a frequency of contradictions equal to or greater than a critical reason, it analyses the common factors in all these wrong attributions, and once the common factor is identified, proposing a project about how to fix it, changing qualities in the set of qualities or changing decisions in the set of decisions, or changing decisions related to some position, in order to avoid contradictions for this reason in the future, what it is an artificial psychological subjective auto-replication.

In general, all the decisions related to how to make decisions related to real objects, as for instance the management of a plantation or the management of a delivery system, are in fact real objective auto-replications in the sense that thanks to this operations we are changing and bettering the reality itself: we can boost the agricultural production to feed the humanity, and we can make the world smaller interconnecting goods and people around the world; in addition to this every time that the artificial psychology is improved as for instance improving the association between decisions and categories, objects, and position, is an artificial psychological objective auto-replication.

But at the same time, if an improvement in the attribution of decisions, as a result is necessary to change the quantitative description of a quality in any category, any change in the quantitative description of any quality in any category demands as well a knowledge subjective auto-replication, because is not only necessary to make changes in the set of qualities, because if changing the set of qualities is changing the qualities attributed to some category, this change must be reflected as well in the distribution of qualities in the category in the taxonomy or list of categories, database of categories, in the application, the first stage by Application, and any change in any quality of any category in the application is a knowledge objective auto-replication.

Robotic subjective auto-replications only would be necessary if in the conceptual scheme, or the conceptual map, realising the categorical Modelling System that there is a blank space or any gap, the possibility to propose the construction of new robotic devices to acquire measurements of these gaps or blank spaces as to have the most completed conceptual scheme and conceptual map, so as to have the more update deep artificial comprehension over the space where is working in its specific subject, specific science, specific discipline, or specific activity.

Rubén García Pedraza, 19 January 2020, London

Reviewed 18 May 2025, London, Leytostone

Probabilidad Imposible: Specific categorical Modelling System, third stage

Imposiblenever@gmail.com